

CATEGORY 1

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November 25, 1996
GO2-96-229

Docket No. 50-397

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Gentlemen:

Subject: **WNP-2, OPERATING LICENSE NPF-21
RESPONSE TO THE SAFETY EVALUATION ON INSERVICE TESTING
PROGRAM RELIEF REQUESTS FOR PUMPS AND VALVES (TAC No.
M91159)**

- References:
- 1) Letter, GI2-95-296, dated November 27, 1995, WH Bateman (NRC) to JV Parrish (SS), "Inservice Testing Program Relief Requests For Pumps and Valves - Washington Public Supply System (WPPSS) Nuclear Project No.2 (WNP-2) (TAC No. M91159)"
 - 2) Letter, GO2-94-280, dated December 16, 1994, JV Parrish (SS) to NRC, "Operating License NPF-21, Submittal of the Second Ten-Year Pump and Valve Inservice Testing (IST) Program Plan"
 - 3) Letter, GO2-96-014, dated January 19, 1996, JV Parrish (SS) to NRC, "Request for Amendment to Operating License NPF-21, Primary Containment Leakage Testing"

In Reference 1, the NRC provided a Safety Evaluation (SE) for the WNP-2 Second Ten-Year Interval Pump and Valve Inservice Testing (IST) Program addressed in Reference 2. Contained herein, as requested by the SE cover letter, are responses to recommended actions 4.1 through 4.7 as identified in the associated Technical Evaluation Report (TER). All seven recommended actions have been reviewed by the Supply System and all actions have been implemented except action 4.3 which involves a commitment but no immediate action. Attachment A provides the results of our review of each recommended action, and the implementing actions taken.

Additional changes to the IST Program Plan are being made as a result of issuance of NUREG-1482, Guidelines For Inservice Testing At Nuclear Power Plants. As stated in Reference 3, changes to the IST Program Plan are being made to implement changes required by 10CFR50 Appendix J, Option B. Attachment B provides a summary of all changes to the IST Program Plan and a short discussion of each change.

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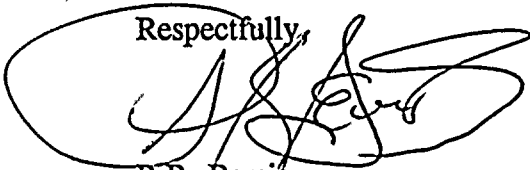
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**RESPONSE TO THE SAFETY EVALUATION ON INSERVICE TESTING PROGRAM
RELIEF REQUESTS FOR PUMPS AND VALVES**

Revision 1 to the Second Ten-Year Interval IST Program Plan is included for your review as Attachment C.

Should you have any questions or desire additional information on this matter please call me or Ms. L. C. Fernandez at (509) 377-4147.

Respectfully,



P.R. Bemis
Vice President, Nuclear Operations
Mail Drop PE23

Attachments

- A) Response to IST Program Recommended Action Items
- B) Summary of Changes of Revision 1 of the Second Ten-Year Interval IST Program Plan
- C) Second Ten-Year Interval IST Program Plan, Revision 1

cc: LJ Callan - NRC Region IV
KE Perkins, Jr. - NRC Region IV, Walnut Creek Field Office
TG Colburn - NRR
NRC Sr. Resident Inspector - 927N
DL Williams - BPA/399
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RESPONSE TO THE SAFETY EVALUATION ON INSERVICE TESTING PROGRAM RELIEF REQUESTS FOR PUMPS AND VALVES

Attachment A

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RESPONSE TO IST PROGRAM RECOMMENDED ACTION ITEMS

- 4.1 The licensee infers that measuring discharge pressure is more conservative for the standby service water pumps, SW-P-1A, -1B, and HPCS service water pump, HPCS-P-2, because the measurement is uncorrected for elevation. It is assumed that the bay level is at a lower elevation than the discharge piping, thus the discharge pressure is smaller than the pump differential simply because of the difference in static head. It is recommended that the licensee's proposal in Relief Request RP01 be authorized pursuant to 10CFR50.55a paragraph (a)(3)(i), provided that the discharge pressure is less than the calculated differential pressure considering the entire range of suction pressures, such that the acceptance criteria assigned to the discharge pressure gives equivalent protection provided by the Code for differential pressure. (TER Section 2.1.1)

SUPPLY SYSTEM RESPONSE:

Maximum elevation of spray pond level is 434 feet 6 inches and minimum elevation of discharge piping for these pumps is 442 feet. Thus discharge pressure for these pumps will always be lower than the calculated differential pressure for the entire range of suction pressures. Assigning acceptance criteria to the discharge pressure for these pumps gives equivalent protection provided by the Code for differential pressure.

- 4.2 The licensee has proposed in Relief Request RP02 to calculate the flowrates of the diesel fuel oil transfer pumps based on a change in tank level over time and in Relief Request RP06 to calculate the suction pressure based on tank level. The licensee should ensure that the calculated methods are properly proceduralized and meet quality assurance requirements. (TER Section 2.2)

SUPPLY SYSTEM RESPONSE:

A review of the flowrate and suction pressure determination methodology for these pumps shows that the calculated accuracy meets the Code required 2% accuracy. Calculation methods are specified in the surveillance procedures and meet the quality assurance requirements.



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- 4.3 It is recommended that the licensee be authorized to use existing discharge pressure instrumentation for the RHR and High Pressure Core Spray pumps (Relief Request RP05) and vibration instrumentation for the SLC pumps (Relief Request RP07). In the event these instruments are replaced, the licensee should install instruments which meet all the Code requirements. (TER Sections 2.3.2 and 2.4)

SUPPLY SYSTEM RESPONSE:

With regard to the SLC Pump vibration monitoring equipment: The Supply System currently measures pump vibration using an accelerometer matching the characteristics of the hand-held analyzer. The frequency response range limit of the accelerometer is 6 Hz to 3 kHz. In the event it becomes necessary to replace the existing analyzer and its matching accelerometer, and if another matched unit capable of response down to 2 Hz is available and is compatible with the existing vendor software, the Supply System will procure the replacement equipment. Alternately, if the Supply System changes the method of vibration data acquisition (i.e, to utilize proximity probes which measure vibration by displacement), all code requirements will be met.

This contingency to upgrade the vibration equipment has been added to the component condition monitoring program.

With regard to the RHR and HPCS Pump discharge pressure transmitters: The Supply System currently utilizes electronic pressure transmitters (PT) for these pumps providing input to the plant computer (TDAS) which results in resolution and accuracies exceeding Code requirements. The range of the PTs used for these applications were selected to bound the expected pump discharge pressure range during all normal and emergency operating conditions (the maximum expected discharge pressure for the RHR and HPCS pumps is approximately 450 psig and 1400 psig respectively). However, during inservice testing the pumps are tested at full flow, resulting in lower discharge pressures than the elevated discharge pressure that can occur during some operating conditions. For this reason the pump reference value is significantly below the maximum expected operational discharge pressure. A reduction of the range of the PTs to three times the reference value would, in these cases, no longer bound the expected discharge pressure range for these pumps, and therefore is not practicable. If a pressure transmitter were to fail, a like replacement would have to be used due to the above identified reasons of replacing a pressure transmitter with one not suited for all pump flow conditions. However, this is not a concern because the existing instrumentation provides pump discharge pressure indication of higher accuracy and better resolution than that required by the Code for evaluating pump condition and detecting degradation.

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- 4.4 As described in NUREG-1482, a leakage test of valves in series may provide an acceptable means to verify valve closure provided the relief request includes information on the safety analysis treatment of these valves, quality assurance requirements for both valves, the alternate test's acceptance criteria, and the corrective actions that would be taken if excessive leakage is identified. The licensee has not provided a discussion of the plant safety analysis review or the acceptance criteria for the RHR, LPCS and HPCS water leg check valves (Relief Request RV02). The licensee should review the safety analysis report and ensure that both valves are not required to function, and revise the relief request to include this information and the acceptance criteria. It is recommended that interim relief be granted in accordance with 10CFR50.55a paragraph (f)(6)(i) for one year or until the next refueling outage, whichever is later. The licensee should revise and resubmit this request in the interim period. (TER Section 3.2)

SUPPLY SYSTEM RESPONSE:

Relief Request RV02 has been revised to include information on the safety analysis and alternate test's acceptance criteria.

- 4.5 The licensee states that if the slowest Post Accident Sampling System valve's stroke time is acceptable, then the stroke times of the remaining valves will be acceptable (Relief Request RV04). However, the licensee does not state what actions will be taken if the slowest valve is unacceptable. It is recommended that the licensee's alternative be authorized provided the licensee considers all the valves unacceptable and takes corrective action in accordance with paragraph 4.2.1.9, if the slowest valve is unacceptable. The licensee should revise the request to include information on the actions taken if the slowest valve is unacceptable and the rapid-acting characteristic of these valves. Additionally, the licensee should ensure that the testing method and procedure is adequate to monitor the position of all nine valves at once, as proposed. (TER Section 3.4)

SUPPLY SYSTEM RESPONSE:

Relief Request RV04 has been revised to indicate the rapid-acting characteristic of these valves and to declare all nine valves inoperable if the closing stroke time of the slowest valve exceeds the 2 second limit specified for each valve and to take corrective action in accordance with Part 10 paragraph 4.2.1.9. Review of the surveillance procedure and testing method reconfirms that the position of all nine valves at once can be successfully monitored.

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- 4.6 The licensee should revise the IST Program (Relief Request VR05) to clarify that the 1994 Addenda testing frequency requirements will be complied with (i.e., that the valves will be as-found or bench tested every 5 years): Relief to use this clarification, as discussed in TER Section 3.5 is not required.

Testing the MSRV actuators and solenoids and performing the determination of operation and electrical characteristics of position indicators and determination of actuating pressure of auxiliary actuating device sensing element and electrical continuity, independent and on a different schedule than the valves may be acceptable if no maintenance or adjustments are made that could affect the valve's future set pressure determination. The licensee must address this procedurally. It is recommended that the alternate be approved, provided that the licensee ensures that no maintenance or set-pressure adjustments are made prior to the set pressure determination.

SUPPLY SYSTEM RESPONSE:

Relief Request RV05 has been revised to delete the testing frequency exceptions. Testing frequency requirements of 1994 Addenda will be complied with.

Testing of MSRV actuators and solenoids and performing the determination of operation and electrical characteristics of position indicators and determination of actuating pressure of auxiliary actuating device sensing element and electrical continuity, will be performed independently and on a different schedule than the valves without making any maintenance or adjustments that could affect the valve's future set pressure determination. The surveillance procedures will be revised before the next scheduled testing to ensure that no maintenance or set-pressure adjustments are made prior to the set pressure determination.

- 4.7 The licensee should verify the correctness of the flow diagram coordinates specified in the Pump Inservice Test Table. For example, the coordinates provided for the diesel transfer pumps for Flow Diagrams M512-1 and -4 are incorrect.

SUPPLY SYSTEM RESPONSE:

Flow diagram coordinates specified in the Pump Inservice Test Table have been verified and corrected. In addition the flow diagram coordinates specified in Valve Test Table have also been checked against the plant equipment list data base, and corrections made.

RESPONSE TO THE SAFETY EVALUATION ON INSERVICE TESTING PROGRAM RELIEF REQUESTS FOR PUMPS AND VALVES

Attachment B
Page 1 of 3

SUMMARY OF CHANGES OF REVISION 1 OF THE SECOND TEN-YEAR INTERVAL IST PROGRAM PLAN

All the changes are listed under the following categories and are indicated by a revision bar on the affected page(s).

1. Changes to Comply with SE/TER

- a. Added reference to SER indicating NRC acceptance to various relief requests. Revised certain relief requests to comply with TER and indicated any provisions for the applicable relief requests.

	<u>Affected Pages</u>	<u>Change Description</u>
16	Relief Request RP01	Added TER provision (TER Action Item 4.1)
17	Relief Request RP02	Added TER provision (TER Action Item 4.2)
21	Relief Request RP03	
26	Relief Request RP04	
29	Relief Request RP05	Added TER provision (TER Action Item 4.3)
31	Relief Request RP06	Relief not required
34	Relief Request RP07	Added TER provision (TER Action Item 4.3)
157	Relief Request RV01	
158-159	Relief Request RV02	Revised to comply with TER (TER Action Item 4.4)
161	Relief Request RV03	

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162	Relief Request RV04	Revised to comply with TER (TER Action Item 4.5)
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163-166	Relief Request RV05	Revised to comply with TER (TER Action Item 4.6)
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b. Correction of Flow Diagram coordinates specified in the Pump Inservice Test Table and Valve Test Tables (TER Action Item 4.7).

Affected Pages: 12, 13, 17, 30, 62, 65, 68, 74, 90-93, 95, 101, and 103-105

2. Deletions to IST Program

Valves (HY-V-17A, 17B, 18A, 18B, 19A, 19B, 20A, 20B, 33A, 33B, 34A, 34B, 35A, 35B, 36A, and 36B) have been physically removed from the plant due to design changes.

Affected Pages: Valve Test Table and Page 128

3. NUREG-1482 Changes

Changes due to issuance of NUREG-1482 vs Draft NUREG-1482 used in preparation of Revision 0 of IST Program Plan. These changes are to update the previously mentioned references and to clarify previously stated provisions.

Affected Pages: 2, 4, 13, 121, 123, 124, 142, 143, 145, 146, 147, 150 and 152

4. Appendix J Option B Changes

Changes due to adoption of Appendix J Option B Program for leakage testing of Category A valves. Test frequency for the valves being leakage tested per Primary Containment Leakage Rate Testing Program are indicated by legend "J" in the valve test table.

Affected Pages: Valve Test Table pages 59-64, 70-74, 76, 89, 90, 93-100, 102-106 and 110

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5. Technical Changes/Corrections

- a. Deleted the Close function for MS-V-37 and MS-V-38 series vacuum breaker valves as this is not a safety function per OM Code Scope.

Affected Pages: Valve Test Table Page 77

- b. Changed the classification of FPC Pump Suction Isolation Valves (FPC-V-181A and 181B) from "active" to "passive". These valves are open during plant operation and are closed only for pump maintenance.

Affected Pages: Valve Test Table Page 72

6. Editorial Changes and Program Clarifications

Minor non-technical editorial changes have been made to update and clarify the IST Program Plan.

Affected Pages: 1, 58, 60, 61, 63, 65-68, 71-74, 76-79, 90-101, 103, 104, 106, 109-114, 118-120, 123, 133, 136, 142, 144-147, 150 and 153-155

**RESPONSE TO THE SAFETY EVALUATION ON INSERVICE TESTING PROGRAM
RELIEF REQUESTS FOR PUMPS AND VALVES**

Attachment C

SECOND TEN-YEAR INTERVAL IST PROGRAM PLAN REVISION 1